

## Commentary

Tuberculosis remains a global pandemic and an unacceptable burden of human suffering and loss, with 8.8 million new cases and 1.4 million deaths worldwide in 2010, affecting mainly poor and vulnerable people living mostly in developing countries. Tuberculosis treatment is a real challenge whose success is based on good management of the disease.

In some cases of patients under anti-tuberculous chemotherapy whether for lymph node, lung, central nervous system tuberculosis or other localization, a situation important for all the clinicians to be aware of is the occurrence of paradoxical response defined as recurrence or appearance of fresh symptoms, physical and radiological signs in a patient who had previously shown improvement with appropriate anti-tuberculous drugs. This reaction is thought to result from improvement in the host immune response with successful chemotherapy, more precisely an interplay between the host's immune responses and the direct effects of mycobacterial products released during the course of treatment.<sup>[1]</sup>

Paradoxical reaction is not rare since it would be identified in 6% to 30% of non-HIV infected patients receiving anti-tuberculosis therapy.<sup>[2]</sup> It affects the central nervous system in 49% of cases from whom 73% are represented by intracranial tuberculomas<sup>[2]</sup> that are secondary to tuberculous meningitis in 39% to 94% of cases.<sup>[3,4]</sup>

The difficulty of such case is that several other possibilities must be indentified then excluded before incriminating paradoxical reaction to effective therapy: Drug resistance; poor treatment compliance; non-tuberculous disease, inadequate drug regimen, and poor drug absorption. The first situation that is drug resistance is still the most redoubtable for the clinician and often leads mistakenly to increasing the dosage, addition of more anti-tubercular drugs, or a change of the regimen.

In practice, it is not always possible to clearly differentiate between paradoxical deterioration and development of secondary resistance in the absence of positive tests of culture and sensitivity for *Mycobacterium tuberculosis*. Indeed, in cases of tuberculomas as paradoxical reaction, cerebrospinal fluid findings are unremarkable or show a mild non-specific increased protein content and bacteriology is mostly negative. Otherwise, paradoxical

reactions are more seen in extrapulmonary tuberculosis, which is paucibacillary; therefore, the resistance is rare. That's why it shows that it is really primordial to emphasize how important it is for clinicians to consider, identify and to be aware of the paradoxical reaction in patients under anti-tuberculous chemotherapy, to be familiar with various paradoxical responses to anti-tuberculous medication (tuberculomas, enlargement of lymph nodes, pleural effusion...) and to close follow up the patients, especially when secondary resistance is not documented, which is seen in most cases, and because paradoxical reaction does not represent a failure of anti-tuberculous drugs, continuation of anti-tuberculous therapy sometimes associated with corticosteroids such as the case of tuberculomas lead usually to full recovery of patients without a change of the initial drug regimen.<sup>[5]</sup>

Asmaa Jniene, Jamal Eddine Bourkadi

Department of Pneumophtisiology,  
Moulay Youssef Hospital,  
Rabat, Morocco

#### Address for correspondence:

Dr. Asmaa Jniene,  
Moulay Youssef Hospital,  
Sidi Mohamed Ben Abdallah avenue,  
10050, Rabat, Morocco.  
E-mail: asmaajniene@gmail.com

## References

1. Nicolls DJ, King M, Holland D, Bala J, del Rio C. Intracranial tuberculomas developing while on therapy for pulmonary tuberculosis. *Lancet Infect Dis* 2005;5:795-801.
2. Coyle CM, Tanowitz HB. Diagnosis and treatment of neurocysticercosis. *Interdiscip Perspect Infect Dis* 2009;2009:180742.
3. Gupta A, Singhal S. A case of multiple tuberculomas in brain presenting as hemiparesis. *Asian Pac J Trop Dis* 2011;1:83-4.
4. Rakotoarivelo RA., Andrianasolo RL, Ranoharison D, Rakoto RO, Sendrasoa FA, de Dieu Randria MJ. Neurocysticercosis as an important differential of paradoxical response during antituberculosis therapy in HIV-negative patient. *Asian Pac J Trop Dis* 2011;1:333-4.
5. Das A, Das SK, Mondal A, Halder AK. Cerebral tuberculoma as a manifestation of paradoxical reaction in patients with pulmonary and extrapulmonary tuberculosis. *J Neurosci Rural Pract* 2012;3:350-4.

#### Access this article online

##### Quick Response Code:



Website:  
[www.ruralneuropractice.com](http://www.ruralneuropractice.com)